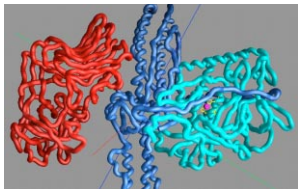
# Medical Chemical & Biological Defense Research Program

**MISSION:** To preserve combat effectiveness by timely provision of medical countermeasures in a chemical warfare (CW) or biological warfare (BW) environment and to deter the use of these weapons by maintaining a strong medical defensive posture.

The Medical Chemical Defense Research Program manages research efforts to develop CW agent countermeasures using basic and applied research to address requirements specified in the Joint Service Modernization Plan.
Research areas include: prevention, diagnosis, treatment, resuscitation, and medical management of CW agent casualties.

The Medical Biological Defense Research Program manages research efforts to develop countermeasures against BW agents and the potential dissemination of an agent through small-particle aerosols. Research areas include: vaccines, toxoids, drugs, and antitoxins, as well as rapid diagnostics essential for proper treatment and medical management if exposure and illness occur.



*CW Defense Products Include:*

- *The Mark I Nerve Agent Antidote Kit*
- *Pyridostigmine bromide, a nerve agent pretreatment drug*
- *The Convulsant Antidote for Nerve Agent*
- *Aerosolized atropine to control respiratory symptoms*
- *The M291 Skin Decontamination Kit*
- *The Skin Exposure Reduction Paste against Chemical Warfare Agents*

*BW Defense Products Include:*

- *Licensed anthrax vaccine*
- *Vaccines in advanced development for Q-fever, smallpox, tularemia, and recombinant multivalent botulinum*
- *Emerging vaccines for plague, next-generation anthrax, staphylococcal enterotoxin, multivalent equine encephalitis, ricin, Marburg virus, and brucella*
- *Diagnostic technologies and confirmation assays*

To disseminate information on the diagnosis and treatment of CW/BW agent exposure or injury, the USAMRMC provides training to all Military services, and also to law enforcement agencies, counter-terrorism initiatives, and local first responders through the use of state-of-the-art distance learning technologies such as satellite transmission.